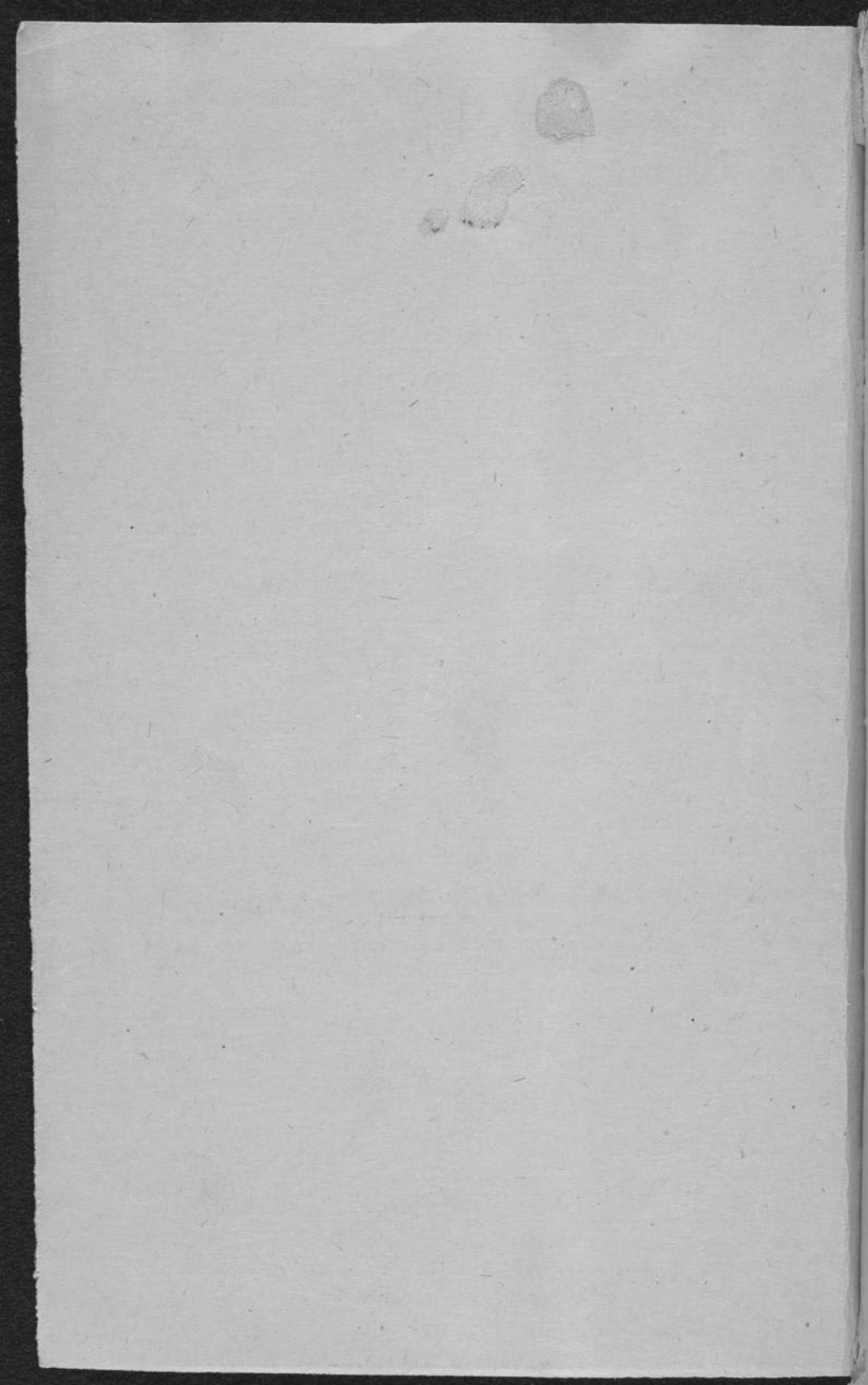


Seeger (C. L.)

a lecture on the epidemic Cholera

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A
LECTURE
ON THE
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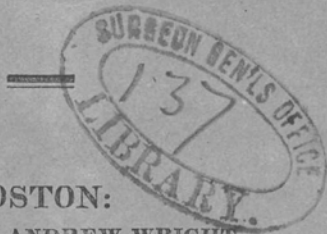
DELIVERED IN
Springfield, on the 2d of August,

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PLACES,

By **C. L. Seeger, M. D.**

Member of the Medical Societies of South Carolina and Massachusetts.



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LECTURE.

IN compliance with the desire of my friends, and of a respectable number of the inhabitants of Springfield, I will endeavour to give in this lecture as correct an idea of the character and treatment of the Epidemic Cholera, as I am able to offer.

A Physician, that has, as I have done, studied with zeal, and practised medical science for one half of a century, had to attend many of the same class of congestive diseases, and made himself acquainted with a great number of facts published by learned and experienced men, cannot find any great difficulty, either in forming a lucid understanding of the Epidemic Cholera for himself, or in clearing away confused notions, entertained by others.

That many should feel desirous, of obtaining all the information upon this subject, they can come at, will not appear strange to any one, who has heard, that this Epidemic is at no great distance from our borders, and has caused already great havoc in the city of New-York; that it pervades every part of the region, where it has entered once, and no means, employed to impede its introduction or progress, were hitherto found successful. It is naturally to be supposed, that this difficulty becomes insurmountable among a population like ours, whose extraordinary spirit of enterprise opens a constant and rapid communication of persons and merchandize throughout every part of this extensive country. But the uneasiness in the public mind is doubtless increased by the multitude of fanciful speculations, accounting for the origin of this Epidemic, for the rapidity of its course, and extensive prevalence; by the confused descriptions of its symptoms; by the contradictory, absurd and often mischievous reports and prescriptions, published in all our daily and weekly papers, and above all, by the notorious fact, that the greatest difference of opinion, in regard to the nature and treatment of this very malignant disease, exists among our medical men.

It is well known, that whenever man is ignorant of the nature and character of any extraordinary phenomenon, his imagination at once supplies that want and wantons in conjuring up the most mi-

raculous, hideous and terrific phantoms. This usurpation of imagination over the understanding explains the fact, why at this time, when a pestilential Epidemic pervades some parts of our country, many a one is so terribly frightened, as "to die many times" before his real death by cholera, to which unbounded fear gives great susceptibility. But we have a sure remedy against this mental aberration at command, if we be determined, to look the dangerous phantom in the face, which cannot stand calm investigation and analysis, and will vanish like the mist before the rising sun. It must be therefore, useful, to view and critically examine all the features of the present Epidemic, and as the plan, generally adopted by all professors of the medical science, leads to a thorough investigation, I shall adopt it, and review in order the various names of this disease, its symptoms, causes, character, its prognosis, prevention and treatment.

The learned men in ancient Greece, who were eminent in cultivating most of the arts and sciences, and whose classic works greatly aided, to deliver mankind from ignorance, superstition and slavery, first undertook the difficult task, to mark and distinguish the symptoms of many diseases with appropriate names. The sudden, violent and spontaneous evacuation of aliments and drink mixed with bile, by vomiting and purging, they named the bilious disease, which is expressed in their language by the word Cholera. This species of Cholera was always observed to attack some individuals, that is, existed sporadic, in temperate climates in the summer season, in hot countries throughout the year. In both these zones, ancient and modern medical men relate sporadic cases of a malignant nature, but in 1817 it attacked many at the same place and time, in India, that is, it became Epidemic, as such assumed the features and character of malignant diseases, spread gradually over the whole of that extensive country, and destroyed the lives of millions of its inhabitants. By some means or other it was introduced from thence into Europe, and pervaded the most parts of its kingdoms with greater or less fatality. Some time in May last, it found its way into Canada, and in the beginning of last month it arrived in New-York city, from whence it will probably travel all over the United States, and our whole continent.

This Epidemic being distinguished by many from the milder species by the name Malignant Cholera, it becomes necessary, to explain the meaning of this epithet. Whenever diseases have symptoms, which at the first sight appear mild and innocent, but are suddenly accompanied with unforeseen and dangerous symptoms, which do agree neither among themselves, nor with the usual periodical

changes of the disease, nor with its manifest causes, founded in errors of diet and regimen, they are styled malignant. Cases in which a sudden prostration of strength supervenes, a delirium in the very beginning of a fever, a dry tongue without thirst, a pulse at the same time not very different from a natural one, a sinking of the pulse, and coldness of the extremities all of a sudden, without previous warning, are justly entitled to the name. The causes of malignant diseases, are founded either on the state of the digestive organs, or on heating and stimulating treatment, diet and regimen, or on contagion, or in many cases on all of them combined. The manifest affection of the digestive organs at the outset, the examination of the bodies of the victims, and the history and operation of the different species of contagion, clearly prove their origin and character. It is contrary to experience to assert, that malignant symptoms characterise only putrid diseases, they very often appear in the latter stage of many decidedly inflammatory fevers.

The names, Cholera Asphyxia, meaning a diminution or suspension of involuntary motions, as of those of the heart; spasmodica, from the word spasm or cramp, mark some of the symptoms of the disease, are not improper, at least harmless. But this cannot be said of the name Cholera Asthenia, a disease of debility, which I shall prove in another place, to be mischievous.

In describing or enumerating the various *symptoms*, we encounter in many diseases, it is a useful practice, to divide them into stages, although these cannot be always distinctly defined by bounds, as they express more or less fleeting, and often most rapid changes, succeeding one another. It is, notwithstanding this difficulty, a great means, to make the physician more attentive to the order of these changes; it assists his memory; it will induce him, to act with more caution, and with more safety to the patient, and to adapt his prescriptions with greater judgment to the stage or period of the disease. Mr. G. H. Bell, an English physician of some note, who studied the Epidemic Cholera for some years in India, aware of the advantages, divided the symptoms of this disease into four stages; but three are in my opinion fully sufficient, and more practical: viz. the forming stage, the cold stage, and the stage of collapse.

The symptoms of the *forming or premonitory stage* are often not attended to by the patient, either because his mind is diverted by business, or he is careless of himself, or very ignorant, or which is frequently the case, habituated to bad feelings, or a slave to intemperance and other follies, and therefore insensible of any alterations in his system, or incapable of sufficient resolution, to adopt prudent

and precautionary measures. The derangement observed in this stage indicates an affection of the stomach and the other digestive organs, which manifests itself by a disagreeable taste in the mouth, by a sensation of nausea, sickness, or oppressive load in the stomach, a white tongue, and by a loose state of the bowels, griping pains, and by a pulse more or less feverish. Those, who are in the habit of indulging their appetite, make a free use of wine and other stimulating drinks, eat much meat, make little exercise, and are of a full blooded habit, experience in this stage some heat in the stomach and bowels, or in other organs; at times a heavy feeling in the head, headache, numbness, giddiness, and a fuller pulse. But in the majority of cases a looseness of the bowels, and a little deafness, are the prominent and most constant premonitory symptoms, and we may add a quicker and rather weaker pulse, than it is natural, and an occasional chilliness. These symptoms continue now and then for a week and more, in some for a few days only, and in broken constitutions but for a few hours.

The second or *cold stage* is characterised: by a burning heat at the pit of the stomach; in most cases by vomiting and loose evacuations of a watery liquid, resembling the water of boiled rice; by the shrivelled ends of the fingers; by a weak small pulse; cold hands and feet and thirst; by spasms affecting most painfully the extremities, and interrupting the pulse, and the respiration, which is short, quick and imperfect; by increased deafness, giddiness, and sunken features. All these symptoms increase, and in well marked cases most rapidly; the pulse especially sinks down to the size of a thread, the coldness extends over the whole body, the tongue even and breath feel cold to your hand, and the spasms attack the muscles of the trunk; the internal heat and thirst on the contrary augment, and the desire for cool air and cold water, which is not retained a moment, is incessantly expressed. By this time the features appear fallen, the nails and lips blue, the hands and feet livid, the voice hollow, the pulse intermittent, the eyes sunken in the head, the respiration slower, and the whole body covered with a cold sweat.

In the third or *stage of collapse* the pulse is gone, the spasms and evacuations cease; the respiration becomes slower and intermittent; the eyes glazed and turned up; the skin feels like a damp cold hide, but yet the patient, though resembling a corpse, lives at times, for a whole day, and is not destitute of his intellect. It is a singular phenomenon after apparent death, that spasmodic twitches in the limbs and body are sometimes observed, and that decomposition comes on later than in other dead bodies.

Whoever desires to become acquainted with the nature of this Epidemic, must not be a stranger to its *anomalies* ; he must know, that though in most cases, the patients vomit and purge, and are tortured with spasms, there are strong cases without spasms, without vomiting and purging ; that there are cases, in which they vomit only, and others, where only one large alvine discharge is followed by a mortal collapse ; the patient walks yet, but his pulse is gone, his heart ceased to beat, a few drops of thick black blood only trickle from his opened vein, he lays down his head, and dies without a groan. These anomalies are not confined to individual instances ; they occur at times in a whole district, visited by the Epidemic. A Mr. Harris, collector of Soonda in India, speaks of a district, where the sick were afflicted in the first beginning with an agonizing heat in the stomach, with vomiting and purging and lockjaw. Death ensued within two hours, and often more rapidly. The constant symptoms however, observed in all cases, are : A great oppression, or burning sensation in the pit of the stomach : the gradual suspension of the pulse ; deficient animal heat ; thick and viscid and black blood, the great obstacle in the venous circulation ; collapsed countenance ; blue lips and nails ; shrunken fingers, and the failure of the usual secretions.

Doctors Barry and Russell were sent by the British government to Russia, to acquire information on the Epidemic there. The latter well acquainted with the Epidemic Cholera, whilst practising in Bengal, discovered immediately, in a Cholera Hospital in Petersburg, the identity of the Russian with the Indian malignant cholera, in the main, essential and constant symptoms, but found likewise some shades of difference in others. He remarked, that the vomiting of fluid and retching were not so incessant, nor the evacuation from the bowels so copious or so frequent as in India and ceased sooner, or were more easily checked ; he found, that in comparison with the other classes of society, the proportion of medical men and attendants, taken ill during the Epidemic in Petersburg, was infinitely greater than in India ; and what appeared a new feature of the disease to him, he observed, that the fever, succeeding the cold stage in Russia, was fully as dangerous as the cold stage itself, whereas in India that fever had only the character of the common bilious fever, and yielded readily to purgatives.

Medical science has been greatly benefitted in all ages and countries by the *examination of the bodies* of deceased persons, of those especially, who died of diseases, that had greatly baffled medical men, or proved very destructive to human life. The great mortality

among those attacked by the Epidemic Cholera, and the little success experienced from the great variety of medicines prescribed, induced many physicians in India and in every part of Europe, to subject a vast number of the dead bodies to this kind of examination. This was first begun in India, and its result was a total and most important change of treatment, by which nine out of ten, and often a greater proportion of strongly marked cases were saved, cases of which under the former treatment nine of ten perished.

I do not deem it necessary to give a full account or all the appearances, in this lecture, and think it sufficient, to state those only, that are the most important in a practical view. The blood vessels, which receive their blood from the left ventricle of the heart by vessels called arteries, and are made to reconvey the blood to the heart again, have the name of veins. Of these latter, all, that are distributed in the face, the limbs, and over the whole surface of the body, were found shrunk and livid, and appeared to have lost before death nearly all their blood. On the contrary the veins of the brains, the lungs, the heart, the liver, the stomach, intestines and kidneys, especially those of the stomach and the other digestive organs were greatly distended and engorged with black thick and viscid blood, and the gall bladder with a thick dark coloured bile. In the inside of the whole alimentary canal from the stomach down, but more constantly and strongly in the small intestines, marks of inflammation or irritation appeared, and besides in the latter a serous fluid, and often in great quantity. The blood contained in the expanded internal veins was found black, thick, viscid, imperfectly coagulated, and deficient in serum, and the increased quantity of the colouring part of the blood, called coassamentum, compared with the lessened quantity of serum admixed, was discovered, to be in direct proportion to the aggravated nature of the disease. Chemically examined, this blood had lost a great proportion of its neutral saline ingredients, all the free alkali contained in healthy serum, and the deficient salts, especially the carbonate of soda, presented themselves in large quantities in the peculiar white dejected matter.

Whoever reflects a moment upon the symptoms, we have related, or upon the singular appearance of the external and internal parts of persons, destroyed by this Epidemic, will have the curiosity of asking the question, What cause or *causes* produced these direful effects? To answer this question, we must, in the first instance direct our attention to the fact, that in India, where this Epidemic was born, the proportion of those affected has been about ten in a hun-

dred, in some situations a greater, in others a less number; in Russia less than three, in England a smaller number still. From France we learn, that in its chief city, Paris, the mortality was great, and the same is said of Hungary and Poland, but it is generally believed, that the cities in Canada, Quebec and Montreal, suffered more than any country in Europe. The limits of a lecture will not permit me, to enter into an examination, as useful as I consider it to be, and a comparison of the local causes and circumstances, which exist in these countries, and from which the difference of a greater or smaller number of fatal cases might be easily deduced. It is sufficient for our present purpose, to reflect upon the description of the circumstances and character of the persons affected, whether they live in India, in any part of Europe, in Canada or within the United States, and we have the best chance of discovering the greater part of the causes, predisposing to this disease.

In India those natives have been generally and the most affected, who were subject to many privations, lived on a poor exclusively vegetable diet, negligent of the means, by which health is preserved or vigour promoted; with whom it was a habit, to be filthy in their persons, to dwell crowded together in very small huts, to wear thin unsubstantial cotton clothes, no flannel, the all-important guard against the variations of temperature, though exposed, as they are, to chilling dews of the night, and to the heat of the sun in the day. The Europeans living in India were less affected, those of them only excepted, who were intemperate in the use of ardent spirits, habitually debauched, or exposed to great fatigue, or labouring under chronic disorders.

The observations made in Europe, in Canada and the United States, perfectly agree with those made in the East, and prove to a demonstration, that wherever the Epidemic Cholera has prevailed, the drunkards, the gluttons, the debauched, the poorly clad, the filthy, those that live in crowded habitations, in dirty narrow streets, exposed to the poisonous gases of putrifying water within their dwellings or near them; and those, that live on poor or too rich, or unwholesome diet, or lead an indolent stupid life, or are exhausted by fatigue, or excited by violent passions, or depressed by cares, by fear and anxiety, or labour under chronic complaints, have a great susceptibility, or predisposition to this and every other Epidemic disease.

Believing, that all parts of the universe influence one another, and that any change or revolution especially in the sun of our system, and still more so within the planet, we inhabit, or within the other

planets, may produce important alterations in our atmosphere, or in the physical powers, and increase the number or virulence of other predisposing causes, I willingly admit, though we are ignorant of the nature of this influence.

But there is a cause of great agency in producing many of our most pestilential diseases, and it makes no difference, whether we style it, a predisposing or exciting cause, as its combination with the antecedent causes soon becomes most intimate. Experience teaches us, that a great predisposition to a specific disease may remain for years silent and inoperative in an individual, until the same is exposed to an extraneous agent, we call *contagion*. When using this word, we mean either a certain specific morbid matter itself, not perceived by our senses, and with which we become only acquainted by its operation, or we speak of its communication from a diseased body to another, that has a predisposition to receiving the same, and in whom it produces a similar malady. That many such contagious disorders exist, and have frequently been Epidemic, is well known, and we mention the small pox and measles as instances of them. How or where those contagious diseases first originated is not ascertained, but that they were propagated by contagion for centuries, and maintained to this day, admits of no doubt. That the Epidemic Cholera is likewise a contagious disease, and propagated from those affected with it to others predisposed to it, is made probable by such powerful facts and arguments, that the common sense of all nations will ever assent to it, and enact quarantine laws accordingly.

It has been amply proved in India, and in the European countries, that this Epidemic has been noticed in a great many instances, to occur in persons, who have recently been exposed to those affected with it, and has often been traced through several diseased subjects in succession; that its introduction into various places has coincided with the arrival of persons from towns or cities, where it has been at the time, or very recently prevalent; that the introduction of the disease into various places has been prevented by a rigid system of nonintercourse; that the extension of the disease from Indostan has been gradual, never too rapid, to have been carried by man; that it has been in all directions, and in continued lines; that it has been in opposition to the course of the winds, as well as in accordance with that course; that it has been little influenced either by climate or the season of the year, and continued under all varieties of the weather for many years, and steadily followed the march of armies, and the great commercial routes of communication. If all these circumstances are taken into consideration, we can manifestly

discover, that they do not agree with ordinary noncontagious diseases, but strongly confirm the supposition of the contagious nature of the Epidemic Cholera. Those, that argue against contagion rely principally upon the circumstance, that the communication of the disease cannot in many instances be traced. But it is very easily accounted for, if it be considered, that numbers of selfish and avaricious persons and smugglers, by bribery and other means, and robbers, thieves and vagabonds of all kinds, by their superior knowledge of by-paths, unfrequented passes and inlets, and by their correspondence with their companions in the interior, can and will make it impossible, to hinder secret communication by persons and goods, and may and do defeat the strictest regulations of the strongest governments. As for the other argument of the noncontagionists, that many physicians and attendants on the sick, and also others much exposed, do not take the disease, is fully answered by the well known fact, that a person not predisposed to a contagious disease cannot receive the contagion.

Upon this principle of predisposition some other questions may be answered, and phenomena elucidated, which give rise to a variety of confused, miraculous and superstitious notions, relating to the origin and character of this Epidemic. We have seen it proclaimed in many of our papers, that this pestilence walketh in darkness; that its eccentric course deviates from all the known and established laws of nature; that it appears all of a sudden like a ghost, or hobgoblin, or angel of destruction, and kills all, whose names are on the proscribed list, then becomes milder, at last its power is exhausted, and it disappears all at once like the witches in Macbeth after finishing their magic incantations. What does common sense and medical experience say to all these idle dreams and waggeries? In this Epidemic as in all others, those that are the most predisposed are attacked at first and with great violence, then those that are less susceptible in a milder manner, and at last there is none sufficiently prepared, to receive the contagion, or at least to be injured by taking it. All this happens during the plague, the dysentery, sore throat, small pox, measles, and all other contagious and Epidemic diseases. Experience denies, that the power of any one of these contagions ever becomes exhausted, as it is constantly observed, that after a shorter or longer period this power appears in full malignant vigour again and again. Many a one, that absented himself for a while from an infected place, and returned after the disease appeared to be exhausted, felt its greatest virulence, if greatly predisposed. It remains indeed a serious question, whether the contagion of the

Epidemic Cholera will ever leave our cities and populous places, or become as Endemic as in Bengal, Bombay or Calcutta.

The contagion is communicated to another by his coming in contact with the exhalations and excretions, emanating from an infected body, clothes and bedding, or floating in the air of a close apartment, and by his insorbing, inspiring and swallowing the volatile poisonous vapour. Attending physicians and nurses and visitors should therefore never eat or drink in such an apartment, and wash their hands and mouths, and gargle their throats, before they take food or drink, and change their outside clothes. That the free atmospheric air transfers no contagion, but rather extinguishes it, is apparent from the many instances of perfect freedom from infection of those, that had shut themselves up, surrounded by houses and persons in the street, infected with the plague in Moscow and Constantinople, and by the walking corpses of the Epidemic Cholera in Petersburg. The safety resulting from quarantine regulations, from airing the infected goods and clothes, amounts to a fact, that the atmospheric air is made, to destroy contagion.

It appears from many observations, that the longest interval of time between the reception of the Cholera infection, and the subsequent manifestation of it in a susceptible person has been from five to six days. The period, during which an individual, including his clothes, bedding or other susceptible personal effects, may retain the power of infecting others with the disease, from which he is himself convalescent, is generally five or six days, but there is a single well authenticated instance of fifteen days interval. As to the capability of merchandize, to convey and afterwards communicate the infective germs of Cholera, it is a well established fact, that the enormous quantity of cotton, hemp and flax, wool and hides imported into Great Britain from infected ports, did not produce a single case of Cholera; but rags, as they may contain the clothing of the sick, require greater precaution. Induced by these facts, the London central board of health reported the following sanitary restrictions for the Epidemic Cholera: The quarantine for a healthy individual, but suspected of carrying the infective germs of Epidemic Cholera as yet latent in his organization, need not exceed ten days; for a lately convalescent twenty days; for persons from infected places, labouring under the mildest degree of purging, being often the first symptom of Cholera, eight days after perfect recovery from the same. The clothes, bedding, effects and sleeping places of all persons on board vessels from infected ports, ought to be opened, aired and purified during three days after their arrival, although the length of the

voyage may have exceeded the period of quarantine, adjudged in such cases, to healthy ships, and unsusceptible cargoes. The longest period of detention for airing and purifying merchandize of the most susceptible class, and arriving under most suspicious circumstances, need not exceed fifteen days, to be counted from the day from which the airing may bona fide have commenced. No modification in reference to climate need be required.

Having finished the examination of the symptoms of the Epidemic Cholera, during the life of the patient, of the appearances of the external and internal parts of his body after death, and the most obvious causes of both, we have to compare these data now with one another, with the phenomena observed in analogous diseases, and with the established principles of medical science. From these premises, we hope to be enabled, to draw correct inferences, and to elucidate and establish *the character and real nature of the disease*. We take it to be a true and undeniable principle, established, confirmed and adopted by the experience and judgment of the most learned and talented medical men from the time of Hipocrates to the present day, that all predisposing and exciting causes of diseases, do affect the stomach and all the organs of digestion directly or indirectly, and that this affection causes nine tenths, if not a greater proportion of all the diseases, incident to man. We take it to be equally true, that those labouring under dyspeptic complaints, or whose digestive organs are vitiated in some way or other, are always highly susceptible to all kinds of Epidemics, and to those of a malignant nature in particular. The truth of these principles is corroborated by the fact, that of all the symptoms of the Epidemic Cholera, there is none more constant, than the oppression, heat and burning, felt in the region of the stomach and bowels from beginning to end through all stages, whilst any sensibility lasts, and with which in most cases a constant vomiting and purging is connected. The main appearances discovered after death in Cholera patients, add proof to proof, that they died in consequence of an affection of the digestive organs in the first instance, which produced the immense accumulation of blood, distending in an extraordinary degree all their veins, followed by the whole train of the succeeding symptoms. The kind of affection, under which the stomach and intestines labour in this case, is easy to understand, if we consider what a great quantity of the watery part of the blood, and within a very short time, may be drawn out by masticating a sharp stimulating substance in our mouth, or by the irritation of a strong dose of a drastic purge, or by an antimonial, that runs down. Is it then an unreasonable supposition to believe that a contagious Cholera

virus introduced into the stomach, and combined there with acrid matter, formed previously by predisposing causes, acquires such a virulent sharpness, as to irritate and stimulate the mouths of innumerable excretory vessels, and to cause a great excretion of the watery part of blood? The great and rapid abstraction of serum must leave the remaining colouring matter, called crassamentum, thick, black and viscid, unfit to circulate, especially in the larger veins, destitute of moving powers. The heart, receiving less and less of the returning venous blood, must gradually cease to act, and to send blood and warmth towards the extremities and the external surface of the body; the external veins and arteries, nearly empty of blood must contract and shrivel, and warmth and pulse disappear.

The congestion of thick black blood is in the Epidemic Cholera and in other congestive diseases, either general in all the veins of the head, chest and abdomen, which is the case in well fed full blooded persons, or appears greatest in one or the other of the organs. The latter case occurs in those, who have injured by errors in diet or other means one of their viscera, or labour under a hereditary constitutional infirmity of one or another part of their system. This peculiarity is usually expressed by the word habit, and medical men speak of an apoplectic, a consumptive habit, &c. To this difference in individuals, the anomalies in the symptoms of every disease, and of the Epidemic Cholera in particular, the greater or smaller chance of recovery, and even the appearance in death, are owing in a great measure, and some Cholera patients appear to die with the dysentery, others with apoplexy, and others with an affection of the lungs.

When we explained to you the names given to the Epidemic Cholera, we reprobated the name Asthenia, given to it by some, and meaning a disease of debility. It conveys absolutely a false idea of the nature of most diseases, is fraught with mischief in practice, and has demoralised tens of thousands, and destroyed more lives, than war and pestilence. We have seen of late, a communication, published in the newspapers, and signed by a physician in New-London, in which he boldly declares the Epidemic Cholera a disease of debility, a malignant Asthenia, identic with the Petechial or Spotted fever, and different only in form, and to be cured by the stimulating and sweating plan. We would ask this gentleman, how he can reconcile with his opinion the facts, that Cholera patients do not complain of debility, that an hour before they are attacked with the symptoms of the second or cold stage, many are able to work, that some, even in the third stage were able to walk to a physician's house, though their

pulse had disappeared, and death overtook them in a few minutes. We would request him to compare the symptoms of Petechial fever with those of the Epidemic Cholera, and point out to us the resemblance of the two diseases, which appear as different as any two in the lists of special pathology. In the Petechial fever we observe an eruption in the skin, and when it becomes malignant, very often by too hot a regimen and stimulants, the eruptions change their colour, and turn dark purple, the pulse grows weaker, the prostration of strength is very great, and if the patient be not faithfully supported by good tonics, good and generous wine and nourishing broths, he must soon die. The great and characteristic prostration of strength, the black spots all over the surface of the skin, the thin dissolved blood, he discharges occasionally, the quick decomposition of his body after death, are all known signs of a putrid malignant fever. In the Epidemic Cholera we observe no eruptive fever nor eruptions, no dead weakness, no thin and putrid, rather a characteristic thick and viscid blood, no benefit from tonics or internal stimulants, and what is a very remarkable fact, putrefaction ensues much later in bodies, destroyed by Cholera, than in any other deceased person.

It being a historical fact, that the advice and example of medical men, to use ardent spirits as a preservative of health, and a remedy against sickness, aided more than any thing, to extend the use of them, and to gain even the countenance of the more respectable and better educated part of our countrymen, we do not think it a useless digression, to give a short history of the author and origin of the mischievous stimulating theory.

There lived in Edinburgh in Scotland, not many years before the American revolution, and at the time the Doctors W. Cullen and John Gregory were professors of medicine in that university, a certain Doctor Brown, a man of some talents, but vicious and intemperate, and withal envious of the great merits and reputation of the professors, which he could never reach. It was this very mean and contemptible competition, that induced him, to compose a theory, totally opposed to the principles taught and practised by his excellent and experienced antagonists, and which is designated to this day by the name of the Brunonian System. He arranged all the diseases, incident to human nature, under the two classes of weakness and excessive strength, and attracted by his lectures and writings the general attention of the physicians of England. But as according to his theory ninety-seven out of a hundred diseases arise from weakness, and the diseases of childhood and old age from the same cause, he prescribed stimulating drinks and opium in almost every case.

This infamous practice, not founded upon experience, but quite contrary to it, and to every principle of correct analogical reasoning, was attacked by many writers, and its vile author justly charged with corrupting the morals of his patients, and giving them most ruinous habits. Though it was well known, that Brown himself fell a victim to intemperance, that many of his disciples were destroyed by the same vice, and that an eminent physician of London took great pains, to warn young medical men from adopting a system, by which he himself unfortunately had made many sots, it found many adherents at first, and since, for the simple reason, that its practice like the fashionable calomel practice, requires scarcely any medical study or knowledge, and is very flattering to the intemperate, amongst whom many of the sons of Aesculapius filled a conspicuous place.

It happened during the American revolution, that many adherents and disciples of Brown belonged to the medical staff of the British army, were quartered for some years during that war in our principal cities, advocated of course by practice and example the doctrines of the Brunonian System, and made them so fashionable, that many young practitioners adopted the popular theory. The faith in the salubrity and great virtue of ardent spirits became more and more disseminated all over the country, and generally adopted by all classes of people. From the pleasing excitement, at first experienced from using this wonderful panacea, from the non appearance of any immediate bad effects, from its being freely used by the most respectable characters, by the Reverend clergy, the honourable legislators and judges, lawyers and physicians, it was naturally inferred, that it must be perfectly innocent, and useful for men, women and children; that its daily use must promote health, keep off, and cure all kinds of diseases. This general adoption of the Brunonian System in the United States alone, destroyed the morals, the lives and happiness of thousands, and if after all the exertions of philanthropists to eradicate it, the Brandy Doctors succeed in introducing it anew, as a preventive and cure of the Epidemic Cholera, it bids fair, to become again a more destructive pestilence, than the most malignant Epidemic, that exists, or can ever be imported.

The order, which I followed throughout this lecture, obliges me now, to make a few remarks upon the *Prognosis*. If the first stage be well attended to, patients will either recover immediately, or be lightly affected by the cold stage, and with proper treatment be cured. But if the second or cold stage be strongly marked, and treated with Brandy, Opium, Camphor, and other stimulants, nine out of ten usually die; if on the contrary they be immediately put

into a warm bed, warmed up by thorough friction, by the application of warm bodies all around them, and of external stimulants, and then bled, and puked freely by proper means, and the treatment afterwards adapted to the degree of reaction, and to the nature of the consecutive fever, only one in ten, and often but one in fifty may lose his life. These are facts, which can and will be proved by sufficient evidence. The signs of recovery are the following: A gradual cessation of the oppressive and burning feeling in the stomach and intestines, of vomiting, purging and spasms; a gradual return of the strength and fullness of the pulse, and of the warmth; appearance of bile in the motions, and discharges of urine; an improvement in the countenance and respiration; warmth of breath, tranquil sleep, a livelier appearance of the eyes, lips, tongue and mouth. The contrary symptoms, a pulseless wrist, coldness of the extremities, of the tongue and breath, a sunken voice, blue nails, livid hands and feet, &c. constitute the stage of collapse, and leave small hopes of recovery.

The *preventive* precautionary measures, recommended by medical and other publications are too often contradictory and erroneous, but I consider the following the most rational: Observe cleanliness in every part of your house, outhouses, yards, adjoining lots, in your persons, dress, bedclothes and bedding. Wash yourself often, or at least twice a week, with warm suds, made of clean soap and soft water all over, and rub yourself immediately dry with coarse warm flannel. If you have any signs of internal impurities, as a foul breath, bad taste in the morning, a foul tongue, sickness, or oppression at your stomach, or if you labour under a costive habit, you have as great and indeed greater cause to wash and clean your inside by proper means, unless you do not care, to be like painted sepulchres.

If many of you live or sleep in the same room, especially if it be small, and not constantly well ventilated, or the air entirely excluded by night and by day, you cannot help inspiring and swallowing a great deal of noxious air, and in case a cholera patient resides in the same room, you will have to inhale and swallow his poisonous exhalations. It is not generally true, that night air is injurious, it ought to be freely admitted, especially into warm close and crowded bedrooms, or at least into the adjoining apartments, which may provide by open doors a purer air. It was proved by many experiments, that night air is much purer, than the air of even a capacious close room, where but one healthy person has slept. Unusual fatigue and exercise, unusual food and drink, we ought to avoid, and endeavour

by every rational means, to curb by useful knowledge, by industry, by performing our duties towards our fellow beings, and by all the powerful motives, true religion and morality command, those of our unruly passions, which cause excitement, depressing cares, anxiety and fear. Flannel next to the skin, woollen stockings and drawers, and other clothes and bedcovering, adapted to the weather, temperature and your habits and feelings, lessen the danger of suppressing perspiration, and of predisposing you to internal congestions. We perfectly agree with the excellent and correct opinions and advice of the Boston Medical Association, that no general directions can apply to a diversity of habits and constitutions; that violent and sudden changes in the habits of the healthy are improper, but that irregular and excessive indulgences should not be continued; that those not used to stimulants, should not now resort to them, and others habituated to a moderate use of them, not wholly abandon them; that articles of diet, found harmless by the experience of an individual, he may continue to use in moderation; that clothing must be varied with reference to the weather, the constitution, mode of life and previous habits of the individual; and that the specific medicines proposed should not be applied, before the existence of the disease is well ascertained, because in times of panic, imagination is apt, to convert all attacks of disease into those of the apprehended Epidemic; and that the treatment recommended would be detrimental to persons in health, and pernicious in many of our febrile inflammatory diseases.

We shall now lay before you a plan of *treatment* of the Epidemic Cholera, founded upon its peculiar congestive character, and which is confirmed by our success in other congestive diseases, and by the experience of the most successful physicians in India, Russia, France, Poland, Turkey, Canada, and in this country, of whom some had a great chance, to study this Epidemic for years. We have shown, that the essential character of this disease consists in a great accumulation or congestion of black, thick and viscid blood in the large veins of the stomach and digestive organs in the first instance, caused by acrid matter, the product of many predisposing errors, made virulent and a specific poison by the combination of the Epidemic Cholera virus with it. The indications, that naturally present themselves, can be no others, but to arrest in the first stage the progress of the internal congestion, that is forming; to enable the heart and the other powers of our system, to lessen and to remove gradually, the great internal congestion already formed in the second stage; and if we be successful in this attempt, to regulate, increase

or lessen the reacting motions. What can not be done in the two first stages, is in most cases impossible, to perform in the third, and we shall therefore make but few remarks upon the stage of collapse.

The means, we employ, to answer our ends, must have a tendency, discovered by reason, science and experience, to prepare the whole external surface of our body for the expected or hoped for reaction, to relax all its membranes, vessels and excretory ducts, and dilate their volumen or size; to stimulate its nerves and the mouths of its innumerable exhaling and resorbing organs; to expand and make more fluid and moveable its thick venous blood, and set it in motion by the vicarious action of muscular power upon its vessels. They must also have a tendency, to lessen and remove a part of the obstacle or weight, opposed to the power of the heat and arteries and other important organs, and to enable the latter to perform their functions again. They must be capable, of removing an existing morbid matter from the stomach and other digestive organs, of hindering its reproduction, of promoting the excretions and secretions of the internal and external organs, and of equalizing the distribution of the blood and juices.

A proper treatment of the first stage, in which the dangerous congestion is forming, as its progress and transition into the second stage plainly shows, is of great importance. Its symptoms somewhat vary in indifferent constitutions, and appear often so trifling and innocent, that no notice is taken of them. But if the Epidemic prevails in our neighbourhood, we must not neglect them, and recollect, that a disordered stomach, a looseness in our bowels, a quick weak pulse, a little deafness, are forerunners of a most fatal disease, which may assail us in a very short time, perhaps within a few hours. It is a fact, that many a one, of regular habits and an unbroken constitution, was freed from these symptoms by a single emetic, adapted to the nature of the disease, taken when warm and in bed, and by its producing a fine, general and free perspiration all over his body, which effectually eliminated the morbid matter, and restored a good state of health. But whenever the constitution is broken, and great predisposition exists, the case is very different. The alledged symptoms increase, no warm moisture follows the administration of an emetic, and the oppressive feeling in the region of the stomach in particular remains unabated. For such a person, especially if he is not of cleanly habits, it would be best, to have himself rubbed hard all over his body with a coarse piece of flannel, dipped in warm

soap suds, to have the soap rubbed off immediately with dry wool-len, to be put into a warm bed between flannel sheets, to be warmed up by placing hot water in bottles to his feet, and if necessary, to be surrounded with bags of hot sand or meal. As soon as a good vein is raised, he ought to be bled freely, and a proper emetic be given to him with the view, to bring on a general moisture on his skin. If we succeed in this, and the symptoms abate, he must be cleansed out for some days with mild laxatives, say manna and senna boiled in milk, or with rhubarb, and a few grains of aloes; observe a strict and simple diet for many days, and a proper regimen.

If the first stage be entirely neglected, as it is usual in those the most predisposed, or if it was treated with brandy and opium, the second or cold stage makes its appearance with its whole train of terrific symptoms. Oppression and burning pain in the stomach, puking and purging, and spasms in the extremities, gradually extending, cold hands and feet, a depressed pulse gradually sinking, and all the other symptoms already described rapidly succeed one another. No time is to be lost now, and all rational means must be employed with energy, faithful perseverance, and dispatch. After cleansing the patient's skin all over his body with hot soap suds, and surrounding him with hot substances, and filling his bed with bags of hot sand or ashes, and applying to his stomach hot boiled potatoes, he ought to be rubbed all over with coarse flannel, dipped often in aqua ammoniæ, which if prepared with quick lime I found the most powerful external stimulant in congestive diseases, but particularly his hands and feet, by a strong person. At the same time hot stones, of the size of fowl eggs wrapped in flannel moistened with ammonia, must be placed into his hands, which he ought to turn incessantly with all his fingers with the view to set all the muscles of his arms into motion, which press upon the blood vessels, and aid very much indeed to increase the circulation of the blood. This trifling artifice enabled me often, to raise a vein in the first or congestive stage of pulmonary consumption, after many and various attempts were tried in vain. The friction must be continued without intermission, but care taken, not to admit cold air under the bedclothes, and more than one person must be at hand, to do the work effectually and strongly, which produces likewise by pressing upon innumerable vessels, a motion in the blood, and life and warmth in the organs. By rubbing hard the spasms are alleviated, at least temporarily, until the lancet removes them

with the rest of the symptoms. If the patient be vomiting, he must lay close to the side of the bed, a vessel must be so fixed for him, that he need not, laying on his side, expose his neck, shoulders or arms; if purging, a warmed bed-pan must be placed under him; if very thirsty, let him keep constantly a few table spoonsful of cold bread water, with a spoonful of wine mixed with it, in his mouth, but though it is improper for him to swallow this or any thing else at this time, whilst he keeps drink in his mouth, a great part of it will be taken up by the absorbents, spread all over the mouth and fauces, thin the thick blood, and ease his thirst. During this warming and stimulating process, the physician must feel occasionally his pulse, and examine the degree of warmth, necessary to swell a vein, and if the hands begin to feel warmer, no time must be lost, to tie up the arm, to raise a good vein, and to open it by a large orifice. The blood ought to run in a full stream, which is greatly promoted, if the patient turns quickly and with all the fingers of his hand the hot stone, of which I spoke before. The patient must lay in a horizontal position at the time, and the quantity of blood taken be large, amounting from fifteen to twenty-four ounces, or it will not make an impression on the internal congestion. If he be not relieved much, if the pulse do not grow larger and stronger, or the internal heat and tenderness continue, the operation must be repeated again after a short interval, and a greater quantity taken. In many severe cases, persons were saved after losing from 30 to 40 ounces and more, and were not weaker than others, from whom but half the quantity was taken. In this as in other congestive diseases small abstractions of blood by the lancet, leeches or cupping, do no good, and weaken more, because the internal cause is not touched, and the heart not relieved from the burthen, which paralyses its action.

It was discovered in India, and in many parts of Europe, in Canada and in the United States, that the burning pain in the stomach, vomiting, purging, spasms, coldness of the extremities, and gradually all the symptoms of the Epidemic Cholera vanished as by magic after full bleedings. But it was also observed that in Russia and other countries, in which the inhabitants do not confine themselves to a vegetable diet, as the Hindoos, very dangerous fevers ensued after cholera patients had safely passed the cold stage, which destroyed many lives at last. Two German physicians, Grenbeck and Brailow, employed in the custom-house hospital in Petersburg, well acquainted with the great pow-

ers of proper emetics, lost not one of thirty strongly marked cases with that fever, because they puked all of them after free bleeding with a solution of two table spoonfuls of common table salt in six ounces of water, to be taken at once, and directed one table spoonful of a similar solution, to be taken every hour for some days.

The physicians of England followed this plan since, and give three tea spoonfuls of powdered mustard in one half of a pint of water, to be taken gradually, for the same purpose, and with a satisfactory result. It appears then from these observations, that the too great reaction and the consecutive fever can be thus moderated, and removed by the use of emetics; and there can be no doubt, that these and the continued use of mild laxatives for some time during the convalescence with a proper diet and regimen will insure the perfect recovery of the patient.

The great majority of those, that neglected themselves entirely, or whose constitution was ruined, or who were treated in the cold stage with brandy and opium and calomel, soon fall into the stage of collapse. If in this stage in which the pulse is gone, and the respiration intermittent, the eyes be glazed and turned up, the body covered with a cold clammy sweat, and all other signs of an approaching death appear, all exertions prove vain and useless. But there have been cases, in which the pulse, though threadlike, reappeared, and some warmth in the region of the stomach was felt. Some English physicians tried the mustard emetic under these circumstances, and so far reestablished the circulation, as to be enabled, to use other means, by which they succeeded in a few instances.

The plan of treatment hitherto explained, as we have shown, is not only in harmony with the character of the disease, with every sound medical principle, and even with common sense, but it is also amply confirmed by many of the most learned and experienced medical men of India and Europe, and by some at least of our own country. Doctor Jameson in the Bengal report declares, that in 1817 in the centre division of the army, commanded by lord Hastings, at the time the cholera assumed the character of a malignant Epidemic, Brandy, Opium and Calomel in small or large doses were entirely useless, and all well marked cases proved mortal. The congestive and inflammatory appearances they discovered in the bodies after death, induced the physicians of the army, to use the lancet, but not using it to a sufficient extent, they met with little success; they resumed the

Brunonian plan, brandy, opium and calomel, and almost all died. In despair they had recourse to bleeding again, and fortunately discovered their former error, and soon became assured, that they could cure all, from whom they could take from 24 to 30 ounces of blood. The same result was observed in the artillery hospitals, and though in some instances five pounds were taken in 24 hours from an individual, he felt not weaker, than those, that lost but half that quantity. The Bombay reporters confirm the same facts. One of them, Dr. Burel, attended from July the 21st to August the 10th in 1818 one hundred Epidemic Cholera cases. Of eighty-eight he bled, but two died, of twelve, that were not bled, not less than eight died. Dr. R. Orton testifies, that he has seen bleeding followed in 32 cases by rapid cures, though 15 of them were far advanced. Dr. Scott in his Madras report asserts, that in most cases 30 ounces of blood taken answered the best purpose. He found, that small bleedings caused debility, but that the effects of large bleedings, reaching the congestion in the internal veins, and abstracting a part of the thick, heavy and viscid blood, lessen the obstacle, which resists the power of the heart. He solemnly declares, that neither the external, nor internal remedies employed, were of the least service, and all the English perished, that were not bled; that upwards of 50 cholera patients, landed from the Indiaman, General Harris, were all cured by the free use of the lancet, and all aboard ships, that were not bled, died. G. H. Bell a famous English, and Broussais a great French medical character, highly recommend bleeding, and the latter condemns in strong terms the whole of the stimulating Brunonian theory in this disease. Grenbeck and Brailow, learned and experienced physicans in Petersburg; many practitioners in Poland; Dr. Dekay of New York, who has seen much of the Epidemic Cholera in Smyrna and Constantinople; Drs. Walmsley and Buckley of St. John in Canada, the Doctors Rees, Ackersley and some others, speak in favour of the lancet and mainly depend upon its use in the treatment of this Epidemic. As for the other great agent, employed by many in Europe, with the view of arresting the ravages of the Epidemic Cholera, namely the emetic, we find less testimony in its favour, which in our opinion is altogether owing to the circumstance, that its great and beneficial power over all the moving machinery of our system, and its adaptation to the cure of the majority of the acute and chronic complaints, in combination and aid of other means, is not as generally known among medical men of our mercurial age, as it

deserves to be, and will be among our grand children. It is probable, that in cases too far advanced, where the lancet cannot be used, this agent may yet produce a reaction, though we have seen many cases of congestive diseases, in which the lancet alone made the emetic active and beneficial. Instead of injecting salt and water into the veins in such desperate cases, it would be worth while, to inject a few grains of tartarised antimony, dissolved in a few ounces of water, a measure used 50 years ago with safety in the Prussian army, and with success in cases, in which a body lodged in the oesophagus could not be removed by the usual means. I flatter myself, that a menstruum will be yet discovered, to neutralise the morbid cholera matter, and make bleeding and all other means unnecessary.

In taking a view of the whole ground, I have passed over, the arguments in favour of the plan of treatment proposed, appear so strong, that I feel great curiosity, to see a defence of the stimulating practice. I know, that some of its advocates go the whole length with their father Brown, and I have some reason, to remember a highly congestive and fatal case about 14 or 15 years ago, treated entirely with large doses of opium by one of his most vicious and rum-loving pupils. But I find many Brunonians, of the present day, highly recommend all kinds of powerful stimuli, to be applied to the cold extremities and the body of a Cholera patient with the view, to expand the dimensions of the external membranes and vessels and bring on an accumulation of blood in them.

Now I should be glad to know, how these gentlemen can apply to the inside of the stomach, the same heating and stimulating substances, with an expectation, of removing the dangerous congestion in its veins? It is revolting to common sense to believe, that four glasses of hot brandy sling and 200 drops of laudanum, amounting to about eight grains of opium, taken within the first hour of the cold stage, when the internal congestion is already formed, would contract the dimensions of the internal and over-distended blood vessels, and not increase their distention, whilst they are irritated and stimulated as much as possible. No wonder, that this Brunonian plan destroyed the lives of thousands of Cholera patients in India, Europe and Canada, and that the Editor of the Montreal Herald challenged in vain all the Brunonians, to bring forward but a single one of their patients, who was cured by them in the cold stage. To go to the other extreme, and attempt to contract at once the greatly expanded, and with a thick,

heavy and viscid blood engorged veins of the stomach by ice, appears rather venturesome, thought after spontaneous vomiting has ceased, and the congestion after free bleedings been reduced, good cold water in moderate doses I consider far preferable to hot relaxing drinks, which have a tendency, to bring on a new congestion.

I have directed your attention in one of the very first paragraphs of this lecture to fear, as an important predisposing cause to the Epidemic Cholera, and I think it my duty, to advert to it again, before I conclude. It is an anticipation, or forefeeling of a future evil, which divests the man, governed by it, of all manliness, of all his energy, gives his imagination the control over his understanding, and leads often to a total dereliction of the most sacred duties. It has a more specific operation upon the human body, than any other passion; it spasmodically contracts the mouths of thousands of our perspiring or exhaling vessels, flings the acrid perspirable matter upon the inside of our digestive organs, which it stimulates, and causes by abstracting much of the watery part of our blood, a looseness, and congestion in our bowels, the very proximate cause of the Epidemic Cholera. That the author of the following anecdote, published in our public prints, had a glimpse of these effects, is very probable. A certain saint, meeting one day an angel, returning from a Turkish city, called Smyrna, upbraided him for telling an untruth some time before, that he was going to destroy 3000 people in the city by the Epidemic Cholera, whilst, as every body knew, he killed more than 30,000. The reply was, I have destroyed but 3000, and the rest were killed by their own fear. The author of this fiction correctly believes, that fear contributes much towards the fatality of the disease, and offers in this manner a strong motive to his countrymen, to rid themselves of it. But he seems not to have been aware, that by representing the Parent of mankind as a tyrannical king, that keeps assassins about him, and sends one occasionally, to murder 3000 of his children at a time, he excites in the minds of the ignorant much greater fear than they had before. If he would have put into the mouth of the angel a declaration, that he was sent by the beneficent Father of mankind, as a messenger of mercy, to alleviate the pangs of death, and to comfort the widow and fatherless, and to raise friends and benefactors for them; and that thousands of mankind are destroyed by their own ignorance and folly, and that all the evils, under which they groan, have the same origin, his angel

would have been taken for a real one, and not for an imp of a malignant spirit. The most of my hearers I hope can comprehend, that it is of the first importance for all of us to acquire as much useful knowledge as possible, and to improve our mental faculties; that by this means alone we may escape a thousand evils of every kind; that our dearest interests command us, to lead a good and virtuous life; to perform our respective duties with faithfulness; not to value the present life as our highest good, but to direct our views to a continued existence in a future state. Then we will discard all idle fear of death, let it come when it will, and be resigned under all circumstances and under all possible events to the holy and paternal government of the almighty, all-wise and all-good Ruler of the universe, whom we need not fear like slaves, their tyrant masters, but should love like freeborn sons, their kind and beneficent father.

